Message

From: Nickle, Richard (ATSDR/DTHHS/OD) [ran2@cdc.gov]
Sent: 11/29/2019 8:50:32 PM
To: Adams, Adam [Adams.Adam@epa.gov]
CC: Louis, Egide (ATSDR/DCHI/CB) [pjy0@cdc.gov]; Lyke, Jennifer L. (ATSDR/DCHI/CB) [jlf1@cdc.gov]; Hanley, Jack (ATSDR/DCHI/CB) [jah8@cdc.gov]; Robinson, Robert E. (ATSDR/DCHI/OD) [fxc6@cdc.gov]; Parham, Alan (ATSDR/DCHI/EB) [axp9@cdc.gov]; Yip, Luke (CDC/DDNID/NCEH/OD) [oiu7@cdc.gov]; Collins, Richard (Rick) (CDC/DDNID/NCEH/DEHSP) [ryc4@cdc.gov]; Young, Patrick (ATSDR/DCHI/CB) [pay9@cdc.gov]; Carroll, Craig [Carroll.Craig@epa.gov]; Petersen, Chris [petersen.chris@epa.gov]; Loesel, Matthew [loesel.matthew@epa.gov]; Daniel Tighe [Daniel.Tighe@WestonSolutions.com]; james.collins@westonsolutions.com; Hope Davila [Hope.Davila@tceq.texas.gov]; Kowalski, Peter J. (ATSDR/DCHI/SSB) [pek2@cdc.gov]; Funk, Renee (CDC/DDNID/NCEH/OD) [rjf8@cdc.gov]; Dieser, Edward (CDC/DDNID/NCEH/OD) [eyn3@cdc.gov]; Reategui-Zirena,Evelyn (DSHS) [Evelyn.Reategui-Zirena@dshs.texas.gov]
Subject: RE: Public Health Support - chemical plant fire
Attachments: BDN Tox Profile Table 3-1 and Fig 3-1 2012.pptx

Adam, in response to your request below, ATSDR has reviewed information available on the incident. Some of this was written before the evacuation was lifted about noon today, but we thought it might be useful anyway.

On Nov 27th, an explosion occurred in the early morning hours at the Texas Petrochemicals (TPC) plant in Port Neches, TX. The cause was unknown with a subsequent fire affecting the southern portion of the plant. The plant makes butadiene in this section of the plant and the fire involved 1,3-butadiene and C4 Raffinate, a mixture of hydrocarbons with 4 carbons in the molecular formula (e.g., butane, butene, etc.). An evacuation was implemented for an area 0.5 miles in all directions and a wider zone of shelter-in-place in the surrounding communities. The fire was very energetic and the smoke plume rose fairly high above the nearby homes as seen in the media photos of the event. Air monitoring was implemented by the company, EPA, and the state. Despite a fire response, a second explosion occurred in the late afternoon of Nov. 27th. Subsequent to the second explosion, the evacuation zone was expanded to a 4 mile radius. As of 7 am, Nov. 29th, the fire was contained but still burning. Portions of the site remain to be assessed. As the fire loses energy, the smoke plume may tend to be closer to the ground. ATSDR concurs that the larger evacuation after the second explosion was protective of public health due to the dynamic situation on the plant site. Until conditions at the plant are adequately controlled to the satisfaction of the Unified Command, the evacuation should remain in effect. ATSDR understands the evacuation order was modified at 10 am local time on Nov. 29th to allow most residents home.

On Nov. 28th, the EPA/OSC requested a consultation on the significance of the environmental data collected. ATSDR initiated a review of the data available on the Texas Commission on Environmental Quality (TCEQ) website, the EPA website, and the TPC website. The data included reports from an permanent ambient air monitoring station located at Nederland High School approximately 4 miles west of the fire, air monitoring collected by the TCEQ at various points downwind of the fire using real time instruments, open path spectrometry (aka, FTIR) by the EPA ASPECT aircraft, air monitoring teams by EPA contractors, and anecdotal reports of air monitoring results by TPC contractor. The instruments were initially scanning for total volatile organic compounds (VOCs), but were subsequently calibrated for butadiene. Locations are described at EPA incident website at https://epa.maps.arcgis.com/apps/Cascade/index.html?appid=f7d43e56b1b44bfd86c35858e02447e7.

Based on the products involved in the fire, the butadiene represents the greater hazard. Information on the toxicity of butadiene is available at the ATSDR website at https://www.atsdr.cdc.gov/substances/toxsubstance.asp?toxid=81. Excerpts from the 2012 ATSDR Toxicological Profile on the inhalation effects of butadiene are attached to this email. Available comparison values include the EPA Reference concentration (RfC) of 0.9 ppb [Uncertainty Factor {UF}=1000] for a lifetime of exposure, TCEQ's long-term air monitoring health effects comparison value of 9 ppb, TCEQ's 24

hour comparison value of 430 ppb, OSHA's Permissible Exposure Level (PEL) of 1 ppm or 1000 ppb for health adult workers, AIHA's Emergency Response Planning Guide (ERPG-1) of 10 ppm or 10,000 ppb for 1 hour of exposure. The lowest adverse effect level (LOAEL) in animals listed in ATSDR Tox Profile Table 3-1 and shown on Figure 3-1 in the attached is 6.5 ppm or 6500 ppb. The animal model involved in that study were mice and there is data to suggest that mice are more susceptible to the effects of butadiene than humans. The human LOAEL listed in the National Library of Medicine's Hazardous Substance Databank is 2000 ppm from a very small case study.

None of the environmental monitoring results described above and reviewed to date report butadiene concentrations above the TCEQ's long-term health comparison value of 9 ppb. Therefore, no adverse health effects would be expected from butadiene exposure from this fire. However, due to the flammability of butadiene, it is likely that most of this product has been consumed by the fire. Once the fire is out, there may be a release of butadiene from damaged tanks at a rate insufficient to sustain combustion. Air monitoring should continue until the conditions of the site can be assessed.

The air monitoring results for total VOCs show some elevated concentrations on Nov. 27th in the time frame between 7:50 to about 8:50 in the morning. The bulk of these elevated readings were along major or secondary arterial roadways and may reflect emissions from vehicles of commuters or those affected by the first evacuation. Due to the short duration of the potential exposure, ATSDR would not anticipate these reported concentrations to have adverse health effects.

To summarize: ATSDR concurs with the decision to evacuate residents on November 27th and recommends the evacuation stands until the Unified Command is satisfied the conditions at the site are adequately under control. The concentrations of butadiene reported are below levels of potential health concern. The total VOC concentrations reported would not be expected to have adverse health effects. ATSDR recommends air monitoring continues after the fire is out until an assessment of the site confirms no leaks of products from any tanks potentially damaged by the explosion and fire.

The information, conclusions, and recommendations in this email are based on the information available to CDC/ATSDR as of the date of transmission. They represent the Agency's interim positions provided to expedite response operations at the scene and are subject to retrospective reviews. Additional information or perspective may modify the conclusions or recommendations. Unless rescinded by the Agency in a transmission to all addressees, the interim position will remain in effect.

ATSDR remains available to provide additional support. If we can be of further assistance, you can reach us at 770-488-7100. Ask for the ATSDR Duty Officer.

Richard A. Nickle, MPH
ATSDR Emergency Response
Atlanta, GA
Ran2@cdc.gov
770-488-3343 (o)
770-488-7100 (24/7)
Ask for the ATSDR Duty Officer

From: Adams, Adam <Adams.Adam@epa.gov>
Sent: Thursday, November 28, 2019 3:13 PM
To: Young, Patrick (ATSDR/DCHI/CB) <pay9@cdc.gov>
Cc: Louis, Egide (ATSDR/DCHI/CB) <pjy0@cdc.gov>; Lyke, Jennifer L. (ATSDR/DCHI/CB) <jlf1@cdc.gov>; Hanley, Jack (ATSDR/DCHI/CB) <jah8@cdc.gov>; Robinson, Robert E. (ATSDR/DCHI/OD) <fxc6@cdc.gov>; Parham, Alan

(ATSDR/DCHI/EB) <axp9@cdc.gov>; Nickle, Richard (ATSDR/DTHHS/OD) <ran2@cdc.gov>; Yip, Luke (CDC/DDNID/NCEH/OD) <oiu7@cdc.gov>; Collins, Richard (Rick) (CDC/DDNID/NCEH/DEHSP) <ryc4@cdc.gov>; Carroll, Craig <Carroll.Craig@epa.gov>; Petersen, Chris <petersen.chris@epa.gov>; Loesel, Matthew <loesel.matthew@epa.gov>; Daniel Tighe <Daniel.Tighe@WestonSolutions.com>; james.collins@westonsolutions.com; Hope Davila <Hope.Davila@tceq.texas.gov>
Subject: RE: Public Health Support - chemical plant fire

Patrick,

This email is a request for assistance. I'm attaching the Initial POLREP with incident specific information. I've spoken with TCEQ, who is coordinating with DSHS to provide assistance. I'm not able to click on your link; appreciate if you have an alternate method to contact them, if needed.

EPA data is being posted on the EPA website www.epa.response.gov/south4groupfire.
There is a link to the TCEQ website with their data.
We have portal access to TPC's data via their portal.

Thanks
Adam

From: Young, Patrick (ATSDR/DCHI/CB) <pay9@cdc.gov>
Sent: Thursday, November 28, 2019 7:35 AM
To: Adams, Adam <Adams.Adam@epa.gov>
Cc: Louis, Egide (ATSDR/DCHI/CB) <pjy0@cdc.gov>; Lyke, Jennifer L. (ATSDR/DCHI/CB) <jlf1@cdc.gov>; Hanley, Jack (ATSDR/DCHI/CB) <jah8@cdc.gov>; Robinson, Robert E. (ATSDR/DCHI/OD) <fxc6@cdc.gov>; Parham, Alan (ATSDR/DCHI/EB) <axp9@cdc.gov>; ran2@cdc.gov; Yip, Luke (CDC/DDNID/NCEH/OD) <oiu7@cdc.gov>; Collins, Richard (Rick) (CDC/DDNID/NCEH/DEHSP) <ryc4@cdc.gov>; Carroll, Craig <Carroll.Craig@epa.gov>; Petersen, Chris <petersen.chris@epa.gov>
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OSC Adams,

ATSDR is prepared to provide public health support for Unified Command and the local health authority. We can assist in addressing risk exposure question, review environmental data, assist with messaging, and provide toxicology resources. We just need a request to support, if needed. Please open the link below. The Poison Control is advertising in social media the use of the Poison Control Center hot line.

CAPT Patrick Young
ATSDR R6
214 577 3506 cell

Get Outlook for iOS

From: Patrick Young <packratt88@gmail.com>
Sent: Wednesday, November 27, 2019 8:25 PM
To: Young, Patrick (ATSDR/DCHI/CB)
Subject: PCC

https://www.facebook.com/NTXPC/photos/a.424062692246/10157387169737247?type=3&sfns=mo

Sent from my iPhone